



U.S. Department of Transportation
Federal Transit Administration



FTA Fuel Cell Bus Program: Research Accomplishments through 2011

Background

The Federal Transit Administration's Office of Research, Demonstration, and Innovation funds a variety of projects to help advance commercialization of fuel cell electric bus (FCEB) technology. This research began in the early 1990s and increased significantly with the start of the National Fuel Cell Bus Program (NFCBP) in 2006. As the number of FCEB projects increases, the need to track the body of research and findings becomes more important to enable sharing across the industry and leverage the limited research dollars available. This report documents the portfolio of FTA-funded FCEB projects. FTA coordinates the FCEB research activities with the Department of Energy (DOE), which also funds several FCEB evaluations. Those projects are also included in this report.

Objectives

The objective of the FCEB research is to facilitate development of commercially-viable FCEB propulsion technologies and the related hydrogen infrastructure. The objective of this report is to catalog the body of FCEB research funded primarily by FTA.

Findings and Conclusions

Since 2006, 42 research projects have been funded including the NFCBP projects, other FTA research projects, supporting research projects funded by DOE, and one new FCEB project under FTA's TIGGER (Transit Investment for Greenhouse Gas and Energy Reduction) Program. As of Fiscal Year 2012, FTA and DOE have 25 ongoing projects, and 17 projects have been successfully completed. These projects have resulted in significant progress toward meeting commercialization goals including:

- Significant reductions in capital costs for FCEBs
- Surpassing 10,000 hours of operation on a single fuel cell system without repair or cell replacement
- Achieving fuel economies at two times that of conventional diesel buses in the same service
- Fostering competitiveness through funding a variety of FCEB designs with several manufacturers
- Increasing public awareness through demonstrations in a number of locations

Benefits

This report documents the complete body of FCEB research funded by FTA and DOE. While separate reports on many of the projects have been published, this report provides a full catalog of the project descriptions, goals, and accomplishments and will be an easy reference to aid FTA and the industry in further coordination and sharing of the progress with commercializing the technology.

Project Information

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This research project was conducted by Leslie Eudy of the National Renewable Energy Laboratory and Kevin Chandler of Battelle. For more information, contact FTA Project Manager Christina Gikakis at (202)-366-2637, christina.gikakis@dot.gov. All research reports can be found at www.fta.dot.gov/research.